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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/691,088

10/18/2000

Akihiro Funakoshi

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07/27/2004

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EXAMINER

AWAD, AMR A

ART UNIT

PAPER NUMBER

2675

14

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/691,088

Applicant(s)

FUNAKOSHI ET AL.

Examiner

Amr Awad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky et al. (US patent NO. 6,611,249; hereinafter referred to as Evanicky) in view of Sato (US patent NO. 5,956,006).

As to independent claim 1, Evanicky teaches a white point adjusting method for adjusting an achromatic color level to be displayed on a liquid crystal module for an input video signal including a plurality of color signals (title and abstract), comprising:

A first step of setting a white point by deciding an offset quantity of at least one color signal from a highest gray level for each color temperature (step 940 of figure 15 and col. 17, lines 53-63 wherein a calorimeter 800a capable of precisely measuring the color coordinates of different colors displayed on the screen, and color temperatures is used to measure the optical characteristics of each RGB colors);

A second step of setting an offset quantity of the color signal in a direction of converging a halftone white point for each color temperature set in the first step (steps 950 and 960 of figure 15 and col. 17, line 64 through col. 18, line 13 wherein the color temperature of the LCD screen is determined by measuring the color temperature of

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pure white displayed on the LCD screen, i.e. all data levels of each R, G and B component set to high). Reference can be also made to figure 16, steps 1040-1090, wherein a color temperature is set for a white point in step 1040, a color temperature is set for halftone (gray scale color) step 1070.

Evanicky does not expressly teach a third step of adjusting chromaticity on a screen of the liquid crystal module by adding the offset quantity decided in the first step and the offset quantity set in the second step to the input video signal.

However, Sato teaches a liquid crystal display apparatus, wherein an offset value is added to the offset quantity of at least one of the color (col. 11, lines 3-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Sato adding an offset quantity to the color signal to be applied to Evanicky's device so as motivated by Sato, to ensure fine adjusting of the display color (col. 2, lines 44-46). Such offset quantity will always assure fine adjusting regardless of the temperature of the display (if incorporated to Evanicky's display).

As to claim 2, Evanicky teaches that input video signal is composed of R, G and B color signals (step 940 of figure 15), the white point setting in the first step is executed by using a prescribed color temperature as a default value, and luminance of the R and G color signals is reduced when a color temperature is set to a high temperature side with respect to the prescribed color temperature (col. 9, line 60 through col. 10, line 4).

As to claim 3, Evanicky teaches the step of adjusting luminance of the entire video signal after white point is set (col. 4, lines 6-17).

As to claim 4, Sato teaches that offset quantity set in the second step is calculated with accuracy of bits larger in number than bits of the input video signal (col. 11, lines 19-33). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teaching of Sato having the offset quantity of bits larger than the input bits, to be incorporated to Evanicky's device so as to ensure the accuracy of the color values, and therefore, having a display with better color quality.

As to independent claim 5, the limitations in claim 5 are substantially similar to the limitations of independent claim 1 and will be analyzed as previously discussed with respect to claim 1.

As to claim 6, Evanicky teaches the step of adjusting luminance of the entire video signal after the setting of a highest gray level achromatic color. (col. 4, lines 6-17).

As to claim 7, as discussed above, Evanicky teaches that the step of setting the adjusting value is provided independently of a contrast adjustment executed by driver for driving the display panel, and the adjusting value is set on the basis of a set value when the contrast adjustment is carried out (col. 10, lines 45-67).

As to claim 8, the claim is an apparatus claim corresponding to method claims 1 and is analyzed as previously discussed with respect to claim 1.

As to claim 9, Evanicky teaches that first reference table is constituted to increase blue luminance in relative fashion when the color temperature is set to a high temperature side (col. 9, line 60 through col. 10, line 4).

As to claim 10, Evanicky teaches an inverter for adjusting the luminance of the liquid crystal display (col. 15, lines 42-47).

As to claim 11, the figures 11A-11B fairly read on the gamma curve disclosed in claim 11.

As to independent claim 12, the claim is substantially similar to the other independent claims rejected above and will be analyzed as previously discussed with respect to independent claims 1 and 5.

As to claim 13, as can be seen above, Evanicky shows that the hue value of the white color remains the same (col. 10, lines 45-67).

As to claims 14-15, Sato teaches that the adjusting means adjusts distribution of luminance among the R, G and B color signals by adding an offset quantity into originally characteristic of each of the entered R, G and B color signals, and then outputs a result thereof to the driver (col. 11, lines 7-57). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Sato adding offset quantity to be incorporated to Evanicky's device so as to ensure the accuracy of the color values, and therefore, having a display with better color quality.

Response to Arguments

3. Applicant's arguments filed May 20, 2004 have been fully considered but they are not persuasive. Applicant (middle of page 3) argued that Evanicky fails to expressly teach how the offset value of each RGB primary input data is determined. Examiner

respectfully disagrees. Figures 15-16 clearly discussing the procedures taking to set the offset quantity. For example, Evanicky recites, "At step 1060, the color temperature of the LCD screen obtained from step 1050 is compared to a reference color temperature value. Relative intensities of the blue and red light sources of the backlight are then adjusted according to any discrepancies between the calculated color temperature and the reference color temperature value." (Col. 19, line 8-12). This recitation simply means that any difference between the reference value and the calculated value of the color temperature will be added or subtracted from the calculated value to adjust the color temperature of the LCD device. In other word, the offset value is simply the difference between the calculated and reference values of the color temperature. Therefore, examiner believes that Evanicky fairly reads on the claimed limitations.

Applicant (second paragraph of page 3) argued that the invention teaches that a mode of calculation can be performed with accuracy of bits larger in number than those of the input video data. Examiner respectfully submits that such limitation is not claimed in any of the independent claims, and is not argued by the examiner to be taught by Evanicky. Applicant (top of page 4) argued that in Sato's reference, a desired color will be approximated by the color of the nearest color coordinates on CIE, but cannot be completely the same color. Examiner respectfully submits that having the completely same color is not claimed or disclosed in the specification. Furthermore, having Sato describing an ECB type LC does not preclude the examiner from using the cited reference since Sato is from the same field of endeavor.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703)305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Amr Ahmed Awad

7-26-2004

A.A